

ABSTRACT OF DISCLOSURE

A semiconductor chip pick-up apparatus includes: a pick-up head for picking up the chip on a sheet; a holding table
5 for holding the sheet; a recognition means for recognizing the chip; a positioning means for positioning the chip relatively to the pick-up head on the basis of the recognition result by the recognition means; and a sheet separating mechanism for separating the sheet from the chip by sucking the sheet from
10 a suction plane brought in contact with a lower surface of the sheet. The sheet separating mechanism includes: a plurality of sucking grooves formed in the suction plane; a plurality of boundary zones, each of which separates the sucking grooves adjacent to each other and supports the sheet in their contact
15 with the lower surface of the sheet during sucking; suction members movably arranged in the sucking grooves, respectively so that when they are moved toward lower surface of the sheet, they are brought into contact with the lower surface of the sheet to suck the sheet; a moving means for moving the suction members;
20 and a sucking means for sucking the sheet from said plurality of sucking grooves.